### 11

# THE DETERMINATION OF HEAVY METAL CONTENT IN SOIL TREATED WITH HIGH DOSAGE OF FERTILIZER IN PADDY

### SALWA BINTI IBRAHIM

Final Year Project Report Submitted in
Partial Fulfilment of the Requirements for the
Degree of Bachelor of Science (Hons.) Plantation Technology and Management
in the Faculty of Plantation and Agrotechnology
Universiti Teknologi MARA

**JULY 2016** 

#### DECLARATION

This Final Year Project is a partial fulfilment of the requirements for a degree of Bachelor of Science (Hons.) Plantation Technology and Management, Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA.

It is entirely my own work and has not been submitted to any other University or higher education institution, or for any other academic award in this University. Where use has been made of the work of other people it has been fully acknowledged and fully referenced.

I hereby assign all and every rights in the copyright to this Work to the Universiti Teknologi MARA ("UiTM"), which henceforth shall be the owner of copyright in this Work and that, any reproduction or use in any form or by any means whatsoever is prohibited without a written consent of UiTM.

Candidate's signature :	Date: 21/7/2016
Name: Salwa Rinti Ihrahim	

I hereby declare that I have checked this project and in my opinion, this project is adequate in terms of scope and quality for the award of the degree of Bachelor of Science (Hons.) Plantation Technology and Management, Faculty of Plantation and Agrotechnology, Universiti Teknologi MARA.

Signature:
Name of Supervisor: NUR FIADAW ABOUL RASHIE
Position: LECTURER
Date: 21/7/2016

#### **ACKNOWLEDGEMENTS**

Thanks to God Almighty for endless blessings for me in completing this thesis successfully. This writing thesis is one most important academic challenge that I ever have to face. It is with great appreciation that I acknowledge the contribution and support of many in completing this thesis. Special thanks to my supervisor because I would never have been able to finish my thesis without the guidance. Thanks also to my family, friend and government agencies that involves.

I would like to express my deepest thankfulness to my supervisor, Nur Firdaus bt Abdul Rashid for the understanding attitudes, patience and providing me guideline for doing this research.

Honorable appreciations to Department of Agriculture, Merlimau, Melaka and Teluk Cengai, Kedah for provide me a lot of information of fertilizer and paddy plantation. They give me lot knowledge to help me in completing my thesis.

Sincere thanks to my fellow classmate and housemates for their co-operation and moral supported during this research. They are good friend willing to help and give me best suggestion. I would like to give special thanks to my family especially my parent who gives me financial support and moral to finish this research.

Finally, I would like to thank to direct and indirect contributed in this research but not mention above, I am really approached of your kindness and its means a lot to me.

SALWA BINTI IBRAHIM

## TABLE OF CONTENTS

			Page
	KNOWL	iii	
TAI	iv		
	T OF FIG		V
LIST OF TABLES LIST OF ABBREVIATIONS			vi vii
ABS	STRAK		ix
<u>CH</u> .	<u>APTER</u>		
1	INT	RODUCTION	
	1.1	Background	1
	1.2	Problem statement	2 3
	1.3	Significance of study	
	1.4	Objective of study	4
2	LIT	ERATURE REVIEW	
	2.1	Paddy	5
	2.2	Clay Soil	6
	2.3	Zinc	7
	2.4	Copper	8
	2.5	Fertilization of paddy	9-10
3	MAT	FERIALS AND METHODS / RESEARCH	
		THODOLOGY	
	3.1	Location of study	11
	3.2	Sampling location	12
	3.3	Experimental design	13
	3.4	Data collection and analysis	14
	3.5	Experimental procedure	15
	3.6	Data analysis	15
4	RES	ULTS AND DISCUSSION	16-21
5	CON	ICLUSIONS AND RECOMMENDATIONS	22-23
CIT	en per	EDENCES	24-26
	CITED REFERENCES APPENDICES		27-47
CURRICULUM VITAE			
CUL	MICUL	UNI VII AL	48

#### **ABSTRACT**

## THE DETERMINATION OF HEAVY METAL CONTENT IN SOIL TREATED HIGH DOSAGE OF FERTILIZER IN PADDY.

This study is about research to determine heavy metal content treated with high dosage of fertilizer in soil planted with paddy. Many source of heavy metal in soil such as achieve high yield farmers used many kind of fertilizer, pesticides and fungicide. The uncontrolled dosage of fertilizer can contribute many problems such as excessive heavy metal environment problem. It's also can cause toxicity and decrease fertility. This study wants to determine whether high dosage fertilizer can be a factor of soil contamination. The objective of this study are to determine the heavy metal content in soil planted with paddy before applying fertilizer and to determine the relationship of heavy metal content after applying fertilizer. The samples were extracted for their total nutrient content by wet digestion method. As a result, for before and after Cu there are significant different (p<0.05) on treatment 3 only. For before and after Zn there are significant on treatment 1 and 3. The fertilizers were applied cause the amount of heavy metal in soil change.